UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,293	04/01/2004	Paul Stark	33976.00003	6126

80880 7590 02/11/2011

Fox Rothschild LLP
Circ Pharma Limited
997 Lenox Drive, Bldg. #3
Lawrenceville, NJ 08648

EXAMINER	
PALENIK, JEFFREY T	
ART UNIT	PAPER NUMBER
1615	

NOTIFICATION DATE	DELIVERY MODE
02/11/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipdocket@foxrothschild.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL STARK,
CATHERINE MARY KELLY, and
NIALL M. FANNING

Appeal 2010-009704
Application 10/814,293
Technology Center 1600

Before DONALD E. ADAMS, FRANCISCO C. PRATS, and
JEFFREY N. FREDMAN, *Administrative Patent Judges*.

PRATS, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

This appeal under 35 U.S.C. § 134 involves claims to a multiparticulate bisoprolol formulation for once-daily oral administration. The Examiner rejected the claims as indefinite and obvious.

---

[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

We have jurisdiction under 35 U.S.C. § 6(b). We reverse the indefiniteness rejection but affirm the obviousness rejection.

STATEMENT OF THE CASE

Claims 1-9 and 15-32 are pending and on appeal (Ans. 2).[2] Claim 1, the only independent claim, is representative and reads as follows:

> 1. A multiparticulate bisoprolol formulation for once-daily oral administration, each particle comprising a core of bisoprolol or a pharmaceutically acceptable salt thereof surrounded by a polymeric coating, said coating comprising at least one enteric polymer coating material selected from the group consisting of cellulose acetate phthalate, cellulose acetate trimaletate, hydroxyl propyl methylcellulose phthalate, polyvinyl acetate phthalate, Eudragit poly acrylic acid, Eudragit S, Eudragit L, polyvinyl acetaldiethylamino acetate, hydroxypropyl methylcellulose acetate succinate, cellulose acetate trimellitate and shellac; said polymeric coating being effective to achieve an initial lag of bisoprolol release in vivo of at least 4-6 hours following administration and thereafter maintaining therapeutic concentrations of bisoprolol for the remainder of the twenty-four hour period.

The following rejections are before us for review:

(1) Claims 1-9 and 15-32, rejected under 35 U.S.C. § 112, second paragraph, as indefinite (Ans. 9-10);[3] and

---

[2] The Appeal Brief entered July 27, 2009, and the Response to Notification of Non-Compliant Appeal Brief entered October 8, 2009, both list claims 1-32 as pending and appealed. However, on July 27, 2009 Appellants filed an after-final amendment canceling claims 10-14 (*see* Amendment 3, 6 (July 27, 2009) and the Examiner entered the amendment (Ans. 2).

[3] The Examiner, apparently inadvertently, listed canceled claims 10-14 as belonging to this ground of rejection (Ans. 9).

(2) Claims 1-9 and 15-32, rejected under 35 U.S.C. § 103(a) as obvious over Noda[4] and Oshlack[5] (Ans. 4-9).[6]

INDEFINITENESS

ISSUE

The Examiner finds that the term "Eudragit" in claim 1 is a trademark and that claim 1, and its dependents, are therefore indefinite (Ans. 9 (citing *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982); *see also* Ans. 12-13 (citing MPEP § 2173.05(u))). Specifically, the Examiner urges that "the trademark/trade name is used to identify/describe: poly acrylic acid, L-, and S-type polyacrylic compounds and, accordingly, the identification/description is indefinite" (Ans. 9-10).

Appellants initially note that MPEP § 2173.05(u) states that the "'presence of a trademark or trade name in a claim is not, *per se*, improper under 35 U.S.C. 112, second paragraph, but the claim should be carefully analyzed to determine how the mark or name is used in the claim'" (App. Br. 12). Appellants contend that the meanings of the terms "Eudragit poly acrylic acid," "Eudragit S," and "Eudragit L" were known in the art as evidenced by their listing in the Handbook of Pharmaceutical Excipients,[7] "an authoritative reference for those of skill in the art" (*id.*).

---

[4] U.S. Patent No. 5,137,733 (filed June 28, 1991).
[5] U.S. Patent No. 5,580,578 (filed July 27, 1993).
[6] The Examiner, apparently inadvertently, also listed canceled claims 10-14 as being to this ground of rejection (Ans. 4).
[7] HANDBOOK OF PHARMACEUTICAL EXCIPIENTS 362-366 (Ainley Wade and Paul J. Weller eds., American Pharmaceutical Association 2d ed. 1994) (*see* App. Br. Evidence Appendix, Exhibit D).

In view of the positions advanced by Appellants and the Examiner, the issue with respect to this rejection is whether a preponderance of the evidence supports the Examiner's position that an ordinary artisan would have been unable to discern the metes and bounds of the claimed subject matter because of the presence of the term "Eudragit" in claim 1.

FINDINGS OF FACT ("FF")

1. Claim 1 recites a multiparticulate bisoprolol formulation for once-daily oral administration. Each particle is composed of a core of bisoprolol or a pharmaceutically acceptable salt surrounded by a polymeric coating.

The coating is composed of at least one "enteric polymer coating material" which can be a number of different polymers including "Eudragit poly acrylic acid, Eudragit S, [or] Eudragit L."

2. Under the entry for "[p]olymethacrylates," The Handbook of Pharmaceutical Excipients lists "[a]mmonio methacrylate copolymer" and "[m]ethacrylic acid copolymer" as nonproprietary names, and "Eudragit" (italics removed) and "polymeric methacrylates" as synonyms (Handbook 362).

3. The Handbook explains that a methacrylic acid copolymer is "a fully polymerized copolymer of methacrylic acid and an acrylic or methacrylic ester" which includes Eudragit S and Eudragit L (*id.*)

4. The Handbook explains that ammonio methacrylate copolymers are "fully polymerized copolymers of acrylic acid and methacrylic acid esters with a low content of quaternary ammonium groups" (*id.*).

5. The Handbook also sets forth the generic formula for polymethacrylates, as well as the specific formulae of different types of

polymethacrylates, including Eudragit S, Eudragit L, Eudragit RS, and Eudragit RL (*id.*).

6. The Handbook does not contain a specific entry for Eudragit polyacrylic acid.

PRINCIPLES OF LAW

During examination, the PTO must interpret terms in a claim using "the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

The second paragraph of 35 U.S.C. § 112 requires only that one of skill in the art, reading the claims in light of the specification, be able to clearly distinguish between subject matter encompassed by the claims, and subject matter not encompassed by the claims. *See Miles Laboratories Inc. v. Shandon Inc.*, 997 F.2d 870, 875 (Fed. Cir. 1993) ("The test for definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification.").

"[B]readth is not to be equated with indefiniteness." *In re Miller*, 441 F.2d 689, 693 (CCPA 1971).

ANALYSIS

We agree with Appellants that an ordinary artisan would have been able to discern the metes and bounds of the subject matter encompassed by claim 1. As noted above, the Handbook of Pharmaceutical Excipients, whose authority the Examiner does not dispute, provides the specific formulae for both the Eudragit S and Eudragit L recited in claim 1 (FF 5).

Thus, whether or not the term "Eudragit" is or was a trademark, an ordinary artisan would have clearly understood the meaning of the terms Eudragit S and Eudragit L from the Handbook.

While it is true that the Handbook does not provide a specific definition for "Eudragit poly acrylic acid," the Handbook does provide that "Eudragit" is itself a generic synonym for this category of polymer (FF 2). We therefore conclude that claim 1's term "Eudragit poly acrylic acid" encompasses any Eudragit-type acrylic acid polymer, including those exemplified in the Handbook.

As noted above, a claim is not indefinite merely because it is broad. *In re Miller*, 441 F.2d at 693. Thus, the fact that "Eudragit poly acrylic acid" encompasses a variety of compounds does not render it indefinite.

We do not find that *Ex parte Simpson*, 218 USPQ 1020, mandates a holding of indefiniteness. In that case, unlike here, Appellants had provided no evidence that the trademarked term at issue had a clearly defined meaning. *See id.* at 1021-22.

In sum, a preponderance of the evidence of record supports Appellants' contention that an ordinary artisan would have been able to discern the metes and bounds of the claimed subject matter, which is all that 35 U.S.C. § 112, second paragraph, requires. We therefore reverse the Examiner's rejection for indefiniteness.

OBVIOUSNESS

ISSUE

In rejecting claims 1-9 and 15-32 as obvious over Noda and Oshlack the Examiner cites Noda as disclosing a controlled release composition with a core that includes a medicinal compound coated with a slightly water

permeable acrylic polymer, bisoprolol fumarate being the exemplified medicinal agent in Example 12 (Ans. 6). The Examiner finds that Noda discloses its composition as being a once-a-day formulation designed to have a variable initial lag period before release of the medicinal agent, but also retaining an effective blood concentration "for many hours" (*id.*).

The Examiner concedes, however, that "[w]hile Noda teaches many of the limitations of the instant claims, the exact composition of the instant claims is not exemplified in the reference" (*id.* at 7). The Examiner applies Oshlack to meet a number of features recited in dependent claims, and reasons that certain specific parameters recited in dependent claims, such as the amount of bisoprolol to be added to the formulation, would have been routinely optimized and therefore obvious (*see id.* at 7-8).

Based on the references' teachings, the Examiner finds that an ordinary artisan would have been prompted to "prepare a controlled release system comprising bisoprolol fumarate in a core coated first, by a barrier layer and second by an acrylic polymer with a reasonable expectation of successfully obtaining the desired dissolution pattern of the drug from the dosage" (*id.* at 8).

Appellants initially "emphasize that independent claim 1 recites enteric (e.g. pH-dependent) polymers" (App. Br. 8). In contrast, Appellants contend, Noda "is limited to pH-independent coatings and makes clear that its formulations are designed for dissolution that is independent of the pH" (*id.* (citing Noda, at abstract and "Background of the Invention")).

Moreover, Appellants argue the "polymers that Noda et al. exemplifies are recognized in the art as pH-independent. Also, the experiments described in Noda et al. show a formulation that exhibits a pH-

independent drug release profile. Clearly, pH-independence is at the very heart of the Noda et al. teaching" (*id.* at 8-9).

In particular, Appellants note, the acrylic polymers Eudragit RS and RL disclosed at the section of Noda (column 2, lines 40-59) cited by the Examiner in the Final Rejection, are polymers that include a trimethylammoniumethyl group that provide pH-independent coatings to Noda's compositions (*id.* at 9 (citing Handbook of Pharmaceutical Excipients 363)). Thus, Appellants argue, "[r]eplacing the pH-independent coatings of Noda et al. with the pH-dependent coatings claimed in the present application would change the principle of operation of the Noda et al. pH-independent formulations" (*id.*).

The Examiner responds by noting that claim 1 recites "the generic compound Eudragit poly acrylic acid, in addition to Eudragit S and Eudragit L" (Ans. 10). The Examiner goes on to state:

> The term "enteric" as it relates to a polymer coating, is broadly and reasonably interpreted by the Examiner from Appellants' instant disclosure as a recitation of a polymer coating which when applied results in a "delayed" release of the active ingredient it covers. The term is not interpreted by the Examiner as distinguishing between "pH-dependent" and "pH-independent". It thus stands to reason that Appellants' recitation of the genus "Eudragit poly acrylic acid" as a limitation of an "enteric polymer coating" material similarly does not distinguish between "pH-dependent" and "pH-independent".

(*Id.* at 10-11.)

The Examiner further notes that Appellants' Specification defines the Eudragit RL and Eudragit RS used by Noda "as 'ammonio methacrylate copolymers' and thus fall within the genus of Eudragit polyacrylic acids"

(*id.* at 11 (citing Spec. 10:7-9)). Thus, the Examiner reasons, "the limitations set forth in the instant claim, broadly and reasonably interpreted, do not preclude the use of a pH-independent polymer such as Eudragit RS or RL for use as the enteric coating material" (*id.*).

The positions advanced by Appellants and the Examiner raise two issues: (1) whether it was reasonable for the Examiner to interpret the recitation in claim 1 of an "enteric polymer coating material" as encompassing a polymer with pH-independent solubility properties, and (2) whether it was reasonable for the Examiner to interpret the recitation in claim 1 of a "Eudragit poly acrylic acid" as encompassing the Eudragit RS taught by Noda as being used as a coating over a core composition containing bisoprolol.

FINDINGS OF FACT

7. As noted above, claim 1 recites a multiparticulate bisoprolol formulation for once-daily oral administration. Each particle is composed of a core of bisoprolol or a pharmaceutically acceptable salt surrounded by a polymeric coating.

The coating is composed of at least one "enteric polymer coating material" which can be a number of different polymers including "Eudragit poly acrylic acid."

8. Appellants point to no definition in their Specification for "enteric" or "enteric polymer."

9. The Specification states, however

> A wide range of polymers can be used in the polymer coating. These polymers include *enteric polymer coating materials*, such as . . . Eudragit® poly acrylic acid and poly acrylate and methacrylate coatings such as Eudragit® S or

> Eudragit® L, . . . [and] ammonio methacrylate copolymers such as Eudragit® RL or Eudragit® RS . . . .

(Spec. 8-10 (emphasis added).)

10. The Handbook of Pharmaceutical Excipients discloses that the ammonium groups on Eudragit RL and RS "give rise to pH-independent permeability of the polymers" (Handbook 363).

11. Noda discloses a controlled release pharmaceutical composition that comprises "a core containing a medicinal compound and a coating layer containing a water-repellent salt and a water-insoluble and slightly water-permeable acrylic polymer having trimethylammoniumethyl group. Said preparation releases a medicinal compound in a sigmoid type dissolution pattern irrespective of the PH of a dissolution medium" (Noda, abstract).

12. Noda discloses that its composition allows for initial lag in drug release for up to about 5-10 hours (*see, e.g.,* Figures 1 and 2), with therapeutic plasma concentrations of drug being maintained as long as 24 hours (*see, e.g.* Figure 4).

13. Noda discloses that bisoprolol is a drug suitable for use in the core of its compositions, with Eudragit RS being included in the core's polymeric coating (*id.* at col. 9, ll. 46-52 (Example 12); *see also id.* at col. 9, ll. 31-37 (describing coating used in Example 12)).

PRINCIPLES OF LAW

It is well settled that "obviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)).

However, "[c]laims are not to be read in a vacuum[;] while it is true they are to be given the broadest reasonable interpretation during

prosecution, their terms still have to be given the meaning called for by the specification of which they form a part." *Royka*, 490 F.2d at 984.

ANALYSIS

Appellants' arguments do not persuade us that the Examiner failed to make a prima facie case of obviousness.

Claim 1 recites a multiparticulate bisoprolol formulation for once-daily oral administration. Each particle is composed of a core of bisoprolol or a pharmaceutically acceptable salt surrounded by a polymeric coating. The polymeric coating must be effective to achieve an initial lag of bisoprolol release in vivo of at least 4-6 hours following administration and thereafter maintain therapeutic concentrations of bisoprolol for the remainder of the twenty-four hour period after administration.

As noted above, Noda discloses a pharmaceutical composition undisputedly capable of achieving the lag and drug delivery required by claim 1, and also discloses that the composition's core can be composed of bisoprolol, with a polymeric coating that includes Eudragit RS (FF 11-13).

The disputed limitation in claim 1 requires the core's coating to be composed of at least one "enteric polymer coating material" which can be a number of different polymers including "Eudragit poly acrylic acid." While Appellants assert that "enteric" requires the polymeric coating to have a pH-dependent permeability (App. Br. 8), Appellants point to no definition of "enteric" supporting that assertion.

To the contrary, Appellants' Specification explicitly includes the polymer Eudragit RS in a list of "enteric polymer coating materials" (FF 9). As noted above Eudragit RS was known in the art to have pH-independent permeability (FF 10).

Thus, the Specification's inclusion of pH-independent polymers in a list of enteric polymeric coatings supports the Examiner's contention that the term "enteric" in claim 1 was not limited to pH-dependent polymers. To the contrary, Appellants' own Specification shows that the Examiner was reasonable interpreting the term "enteric polymer coating material" as encompassing the Eudragit RS used in Noda's compositions.

We also agree with the Examiner that it was reasonable to conclude that the term "Eudragit poly acrylic acid" encompassed the Eudragit RS taught by Noda as being used as a coating over a core composition containing bisoprolol. As noted above, because the Handbook of Pharmaceutical Excipients does not provide a definition of the term "Eudragit poly acrylic acid," but instead lists the term "Eudragit" as a generic synonym for polymethacrylates (FF 2), an ordinary artisan would reason that the term "Eudragit poly acrylic acid" encompasses any Eudragit-type acrylic acid polymer exemplified in the Handbook, including the Eudragit RS used by Noda in its compositions.

In sum, we agree with the Examiner that Noda teaches a composition having all of physical properties recited in claim 1, and also teaches that the composition includes all of the ingredients required by claim 1. We therefore affirm the Examiner's obviousness rejection of claim 1 over Noda and Oshlack, as well as claims 2-9 and 15-32, which were not argued separately. *See* 37 C.F.R. § 41.37(c)(1)(vii).

SUMMARY

We reverse the Examiner's rejection of claims 1-9 and 15-32 under 35 U.S.C. § 112, second paragraph, as indefinite.

However, we affirm the Examiner's rejection of claims 1-9 and 15-32, under 35 U.S.C. § 103(a) as obvious over Noda and Oshlack.

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

alw

FOX ROTHSCHILD LLP
CIRC PHARMA LIMITED
997 LENOX DRIVE, BLDG. #3
LAWRENCEVILLE, NJ 08648